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CONTRIBUTION TO THE KNOWLEDGE OF THE GENUS *AULACIA* BALY, 1867

(COLEOPTERA, CHRYSOMELIDAE, EUMOLPINAE)

Thanks to amiability of Dr. R. Poggi I had received Jacoby's types of genus *Aulacia* housed in Genoa Museum. Their study stimulated me to revise this small and very poorly known genus, which was described with four species by J. Baly (1867). Three more species were described later by M. Jacoby (1894, 1896) and after him, during more than one hundred years, nobody studied it.

There is no doubt that *Aulacia* is very near to *Colaspoides* Castelnau, 1833 and the difference between them was not so clear. In the original description Baly wrote: "*Aulacia* bears the same relation to *Colaspoides* that *Nodina* does to *Nodostoma;* in structural characters it agrees with *Colaspoides,* in habit and size with *Nodina*". It seems that Baly included in *Aulacia* only females with ridges on elytra while it is very likely that he could place in *Colaspoides* all the males and the females without ridges.

I think that the main character useful to divide *Aulacia* from *Colaspoides* is the deeply sulcate groove bordering upper and inner margin of eye.

Apart from the materials belonging to Genoa Museum, I have studied also collections of a few European museums; their abbreviations are given as follows.

BM:	Natural History Museum, London;
HMB:	Hungarian Museum of Natural History, Budapest;
MSNG:	Museo Civico di Storia Naturale "G. Doria", Genova;
NHMB:	Naturhistorisches Museum, Basel;
SMNS:	Staatliches Museum für Naturkunde, Stuttgart;
LM:	author's collection, Moscow.

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KEY TO THE SPECIES

1 (18) Mid tibiae not emarginated before apex (fig.22). Head with distinct ocular grooves. Anterior margin of clypeus straight or slightly concave.

2 (3) Antennae almost as long as body (0.95), preapical segments very feebly widened, about 5-5.3 times as long as wide. Elytra of female with 3 ridges in anterior half (fig.1). Aedeagus as in fig. 7, spermatheca as in fig. 13. Antennae fulvous with segments 6-9 black. Colour variable: fulvous with darkened legs, black with more or less reddish head and underside and often with large fulvous spot on humeral area of elytra. Length of male 3.4-3.7 mm, of female 3.8-4.9 mm. Malay Peninsula. . . . . *A. brunnea* Jacoby, 1894

3 (2) Antennae much shorter as body, preapical segments moderately or distinctly widened, not more than 4 times as long as wide. Body smaller.

4 (5) Antennae about 0.8 of body length, preapical segments moderately widened, about 3.5-4 times as long as wide. Body entirely fulvous. Aedeagus bifurcate on apex (fig.8). Length 2.8 mm. Female unknown. Malay Peninsula. . . . . *A. fulva* L. Medvedev, n. sp.

5 (4) Antennae about 0.5-0.7 of body length, preapical segments 1.7-3.3 times as long as wide. Body not entirely fulvous. Aedeagus not bifurcate.

6 (11) Species from Singapore, Malay Peninsula and Sumatra.

7 (8) Elytra of female with one short curved ridge in anterior part (fig. 3). Antennae about 0.5-0.6 of body length, preapical segments distinctly widened, 1.5-1.8 times as long as wide. Aedeagus as in fig. 9. Spermatheca as in fig. 14. Antennae fulvous with dark widened segments, legs fulvous, colour of elytra variable. Length of male 2.9 mm, of female 2.9-3.3 mm. Malay Peninsula. . . . . *A. laeta* L.Medvedev, n. sp.

8 (7) Elytra of female differently sculptured. Antennae about 0.6-0.7 of body length.

9 (10) Upperside black with more or less distinct metallic lustre; head, underside and legs fulvous, antennae fulvous with black apical segments. Preapical antennal segment 1.7-2.4 times as long as wide. Elytra of female with 3 feeble ridges, including the short subhumeral one (fig. 2). Aedeagus as in fig. 10, spermatheca as in fig. 15. Length of male 2.1-2.3 mm, of female 2.6-3.2 mm. Singapore (*terra typica*), Malay Peninsula, Sumatra.. *A. diversa* Baly, 1867

10 (9) Body fulvous including antennae, elytra broadly black margined or sometimes with black scutellar triangle, lateral and apical margins. Preapical antennal segments 3-3.3 times as long as wide. Elytra of female without ridges. Spermatheca as in fig. 16. Length 2.8-3.1 mm. Male unknown. Sumatra. .... *A. ornata* Jacoby, 1896

11 (6) Species from Borneo.

12 (15) Upperside entirely black, sometimes with feeble metallic lustre; head, underside and legs fulvous or more or less darkened. Antennae about 0.55-0.65 of body length.

13 (14) Elytra of female with 5 ridges (fig. 4). Spermatheca as in fig. 17. Preapical antennal segments twice as long as wide. Length 2.8-3 mm. Male unknown.. *A. femorata* Baly, 1867

14 (13) Elytra of female with 2 distinct and long ridges and also 1 short subhumeral and 1 innermost very feeble. Preapical antennal segments 2.6 times as long as wide. Aedeagus as in fig. 11, spermatheca as in fig. 18. Length of male 2 mm, of female 2.6 mm (according to Baly the length should be 4/5 lines = 1.7 mm).. *A. fulviceps* Baly, 1867

15 (12) Upperside at least partly fulvous.

16 (17) Upperside black with feeble metallic lustre, each elytron with 2 large red spots. Head red, antennae fulvous, in male with darkened apical segments, underside and legs piceous with fulvous tarsi. Elytra of female as in fig. 5.

Aedeagus as in fig. 12, spermatheca as in fig. 19. Length of male 2.5 mm, of female 3.1 mm.. . . . .
. . . . *A. riedeli* L. Medvedev, n. sp.

17 (16) Body fulvous with darkened apical segments of antennae. Elytra of female as in fig. 6. Spermatheca as in fig. 20. Length 3.2 mm. Possibly identical with preceding species. . . . . *A. sp. A*

18 (1) Mid tibiae emarginated on outer side before apex (fig. 23). Elytra of female not ridged on sides. Head with ocular grooves very narrow and not prolonged anteriorly. Body pitch red with fulvous antennae and legs, each elytron with fulvous spot. Spermatheca as in fig. 21. Length 2.8 mm. Borneo (Sarawak). . . . .
. . . . *A. bipustulata* Baly, 1867

LIST OF THE SPECIES

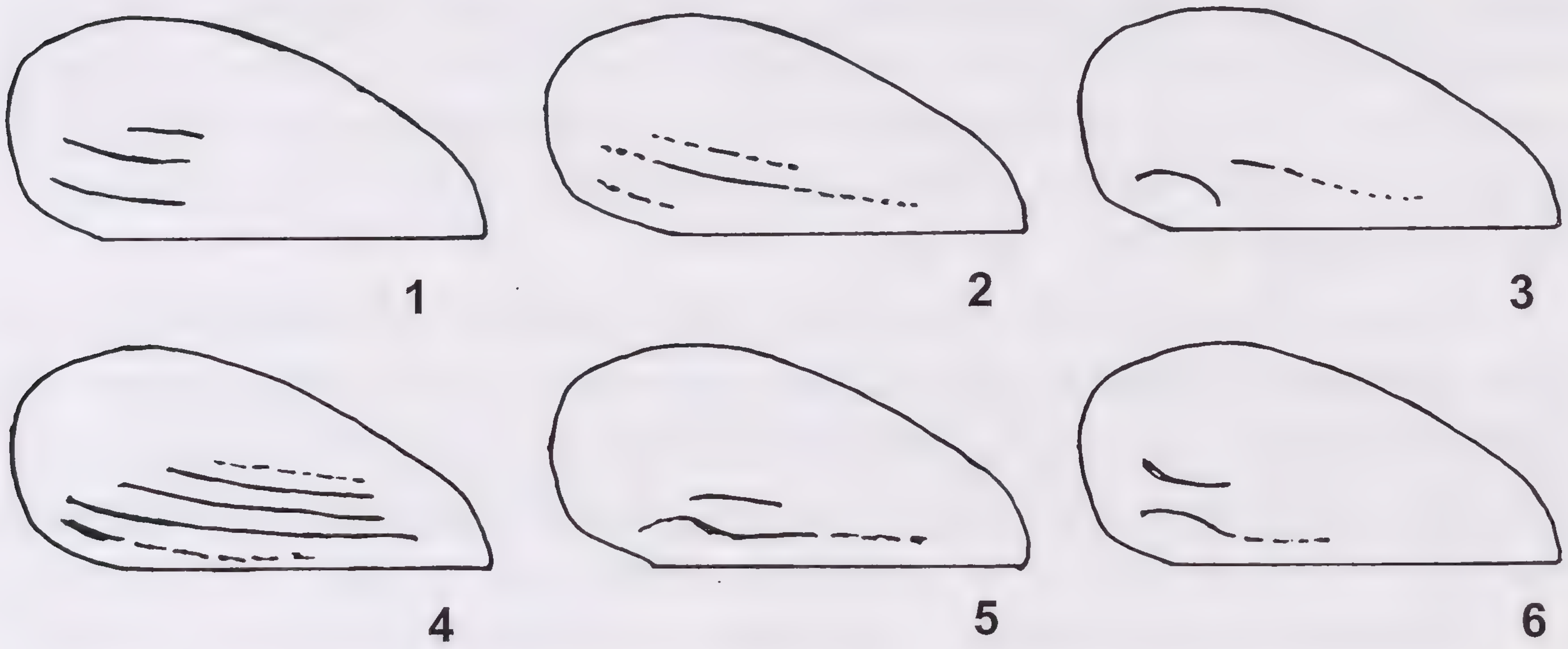
*A. **brunnea*** Jacoby, 1894

Material examined. Malaysia, Tioman, Kampong Tekek - K. Juara (2 48’ N, 104 11’E), 9.III.1998, leg. Dembicky & Pacholatko, 3 ♂♂, 6 ♀♀ (NHMB; 1 ex. MSNG; 2 ex. LM); Malaysia, Pahang, Pulan Tioman, trail between Juara and Tekek, lowland rainforest, swept and beaten, 10-17.III.1995, no. 9, leg. O. Merkl, 9 ♀♀ (HMB; 2 ex. LM). Both series include all the three colour forms.

*A. **fulva*** n. sp.

Holotype ♂: Malaysia, Perak (LM).

Description. Entirely fulvous. Body ovate, not acuminate posteriorly. Head shining, transversely impressed between clypeus and frons, sparsely punctuate, anterior margin of clypeus straight, groove along inner margin of eye very deep. Antennae about 0.8 of body length, five apical segments feebly widened, about 3.5-4 times as long as wide. Prothorax 1.5 times as wide as long, narrowed anteriorly, with moderately large and sparse punctures. Elytra 1.2 times as long as wide, punctures comparatively strong, not dense, arranged in rows along lateral margins, but without ridges. Segment 1 of fore tarsus widened. Last abdominal sternite not serrate on sides, with straight hind margin. Aedeagus (fig. 8) with very characteristic bifurcate apex. Length of body 2.8 mm.



Figs. 1-6. Elytron of female of *Aulacia*, in lateral view. 1: *brunnea*; 2: *diversa*; 3: *laeta*; 4: *femorata*; 5: *riedeli*; 6: sp. A.

A. laeta n. sp.

Holotype ♂: Malaysia - W., Pahang, 30 km E of Ipoh, Cameroon Highlands, Tanah Rata, 1500 m, 22-26.I.1999, leg. P. Cechovský (NHMB).

Paratypes: same locality, 14-17.III.1998, 20.II-3.III.1998, 4 ♀♀ (NHMB; 1 ex. MSNG); Malaysia, Benom Mts., 15 km E Kampong Dong (3 53'N, 102 01'E), 700 m, 1.IV.1998, leg. Dembicky & Pacholatko, 2 ♀♀ (NHMB, LM); Malaysia, Pahang, Cameroon Highlands, 2 km S Tanah Rata, on Tapah Road, roadside vegetation, 27.III.1995, no. 89, leg. O. Merkl, 1 ♀ (HMB); Malaysia, Cameroon Highlands, Gn. Beremban, 1-3.IV.1990, leg. A. Riedel (SMNS).

Description. Male. Fulvous, prothorax black with metallic lustre, except reddish anterior margin, elytra with sutural stripe and poorly delimited spot in middle piceous.

Body ovate, not acuminate posteriorly. Head finely punctuate and microsculptured, especially on clypeus, which anterior margin is straight, groove along inner and upper margin of eyes shallow. Antennae about 0.6 of body length, five apical segments distinctly widened, 1.5-1.8 times as long as wide. Prothorax 1.6 times as wide as long, shining, very distinctly, but not densely punctuate, especially on sides. Elytra 0.9 times as long as wide, strongly, but not densely punctuate, without any distinct rows and ridges on sides. Segment 1 of fore tarsi widened. Last abdominal sternite distinctly serrate on sides, with slightly concave hind margin. Aedeagus as in fig. 9. Length of body 2.9 mm.

Female. Black with feeble metallic lustre, head, antennae, legs and underside usually fulvous, but sometimes darkened. Colour of elytra variable, very often with basal fulvous spot, or with additional apical fulvous spot, sometimes connected with basal spot with longitudinal stripe, in some cases entirely dark.

Prothorax more finely punctuate, sometimes almost smooth. Elytra with short arcuate ridge starting from humerus (fig. 3). Last abdominal sternite arcuately emarginated on hind margin. Spermatheca as in fig. 14. Length of body 2.9-3.3 mm.

I cannot be definitely sure that male and females belong to the same species.

A. diversa Baly, 1867

A. flavifrons Jacoby, 1896 (**n. syn.**)

Material examined. Sumatra, Siboga, X.1890-III.1891, leg. E. Modigliani, 2 ♂♂ (syntypes of *A. flavifrons* Jacoby, 1896; a lectotype is designated (MSNG)); Singapore, 1 ♀ (type of *A. diversa* Baly, 1867 (BM)); Malaysia, Pahang, Pulau Tioman, trial between Juara and Tekek, lowland rainforest, 10-17.III.1995, no. 9, leg. O. Merkl, 1 female (HMB).

A. ornata Jacoby, 1896

Material examined. Sumatra, Pangherang-Pisang, X.1890-III.1891, leg. E. Modigliani, 4 ♀♀, syntypes (MSNG). A lectotype is designated.

A. femorata Baly, 1867

Material examined. Borneo, Sabah, Tibou, 45 km NE of Sapulut, 600-900 m, 7-15.IV.2000, leg. Bolm, 3 ♀♀ (NHMB; 1 ex. LM); Borneo, Sarawak, Kuching, Santubong, 8-9.III.1990, leg. A. Riedel, 1 ♀ (SMNS); Indonesia, Kalimantan Barat, Gunung Palung National Park, Cabang Panti research site, lowland rainforest, 18-26.VII.1993, no. 11, leg. O. Merkl, 1 ♀ (HMB); Borneo, Brunei, 1 ♀ (LM).

A. fulviceps Baly, 1867

Material examined. Borneo, Sabah, Tibou, 45 km NE of Sapulut, 600-900 m, 7-15.IV.2000, leg. Bolm, 1 ♀ (NHMB); Indonesia, Kalimantan occid., NG Sarawai district, Tontang, 24-30.VII.1993, leg. R. Dundra, 1 ♂ (LM).

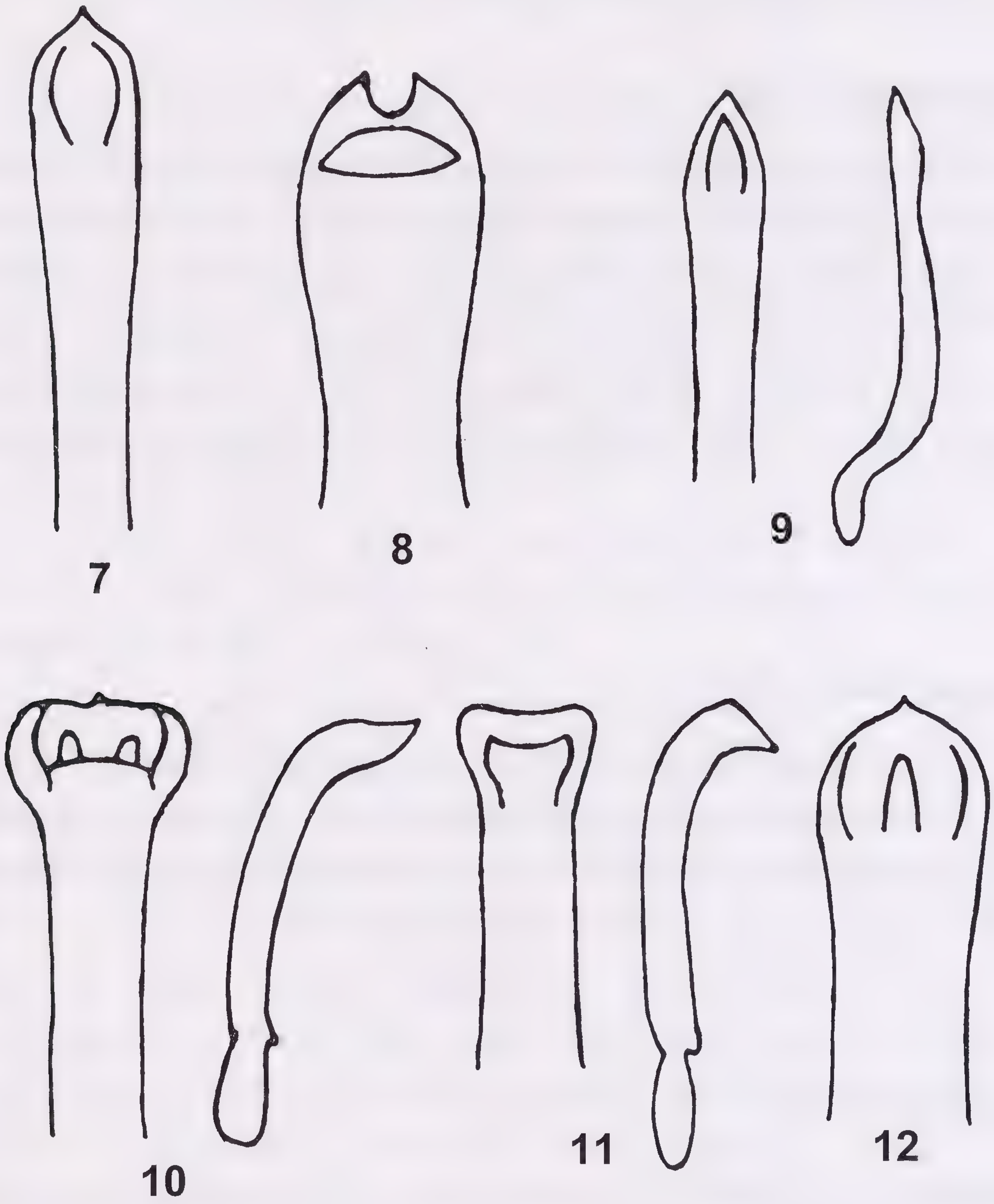
A. riedeli n. sp.

Holotype ♂: Borneo, Sarawak, Kuching, Santubong, 8-9.III.1990, leg. A. Riedel (SMNS).

Paratype: Borneo, Sabah, Kinabalu N.P., Sayap, 1000 m, 28.XI.1996, leg. D. Grimm, 1 ♀ (LM).

Description. Black with piceous underside, antennae and tarsi fulvous, each elytron with two large red spots.

Male. Body ovate, subacuminate posteriorly. Head with a few punctures on hind part of clypeus and anterior part of frons, vertex with longitudinal groove, anterior margin of clypeus almost straight, groove along inner and upper margin of eye deep. Antennae about half of body length, five apical segments distinctly widened, about 2 times as long as wide. Prothorax twice as wide as long, shining, very distinctly, but not densely punctuate. Elytra 1.1 times as long as wide, with large, but not dense punctures, more or less arranged in irregular rows on sides, with elevated interspaces, but without ridges. Segment 1 of fore tarsi moderately widened. Last abdominal sternite not serrate on sides, with slightly concave hind margin. Aedeagus as in fig. 12. Length of body 2.5 mm.



Figs. 7-12. Aedeagus of *Aulacia*, d = dorsal view; l = lateral view. 7: *brunnea,* d; 8: *fulva,* d; 9: *laeta,* d, l; 10: *diversa* (from lectotype of *flavifrons*), d, l; 11: *fulviceps*, d, l; 12: *riedeli*, d.

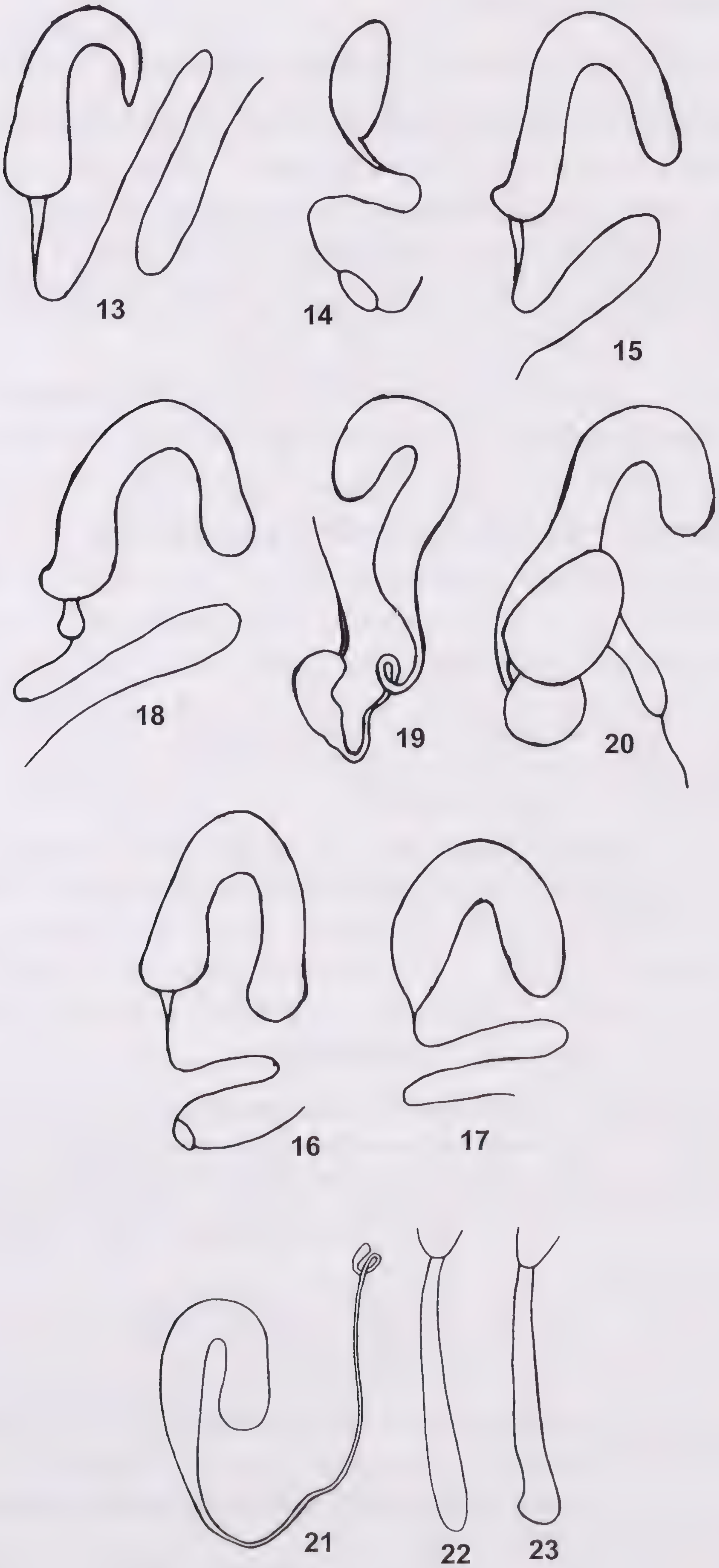
Female. Elytra acuminate posteriorly, with two sharp, comparatively short and curved ridges (fig. 5). Last abdominal sternite with straight hind margin. Spermatheca as in fig. 19. Length of body 3.1 mm.

Derivatio nominis. The species is dedicated to its collector, Dr. A. Riedel.

A. sp. A

Material examined. Borneo, Brunei, 1 ♀ (LM).

Characteristics as in the key; it could be the female of *A. riedeli*, n.sp.



Figs. 13-23. Spermatheca of *Aulacia*. 13: *brunnea*; 14: *laeta*; 15: *diversa*; 16: *ornata*; 17: *femorata*; 18: *fulviceps*; 19: *riedeli*; 20: sp. A; 21: *bipustulata*. Mid tibia of *Aulacia*. 22: *diversa*; 23: *bipustulata*.

A. bipustulata Baly, 1867

Material examined. Borneo, Sarawak, type ♀ (BM).

Redescription of the type. Body pitch red with fulvous antennae and legs, each elytron with fulvous spot. Head with ocular grooves very narrow and not prolonged anteriorly. Elytra of female not ridged on sides. Mid tibiae emarginated on outer side before apex (fig. 23). Spermatheca (fig. 21) sharply different from those of the other species of the genus. Length 2.8 mm.

Remarks. Structure of head, elytra, mid tibiae and spermatheca differ sharply from the typical *Aulacia*. It seems that this species might be removed to the genus *Colaspoides* Laporte, 1833, but I have no enough material to decide this question.

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ABSTRACT

A key to the species of the genus *Aulacia* Baly is given. The types of *A. flavifrons* Jacoby and *A. ornata* Jacoby were studied and lectotypes were designated. Three new species, *A. fulva, A. laeta* (from Malay Peninsula) and *A. riedeli* (from Borneo), are described. *A. flavifrons* Jacoby is a new synonym of *A. diversa* Baly.

RIASSUNTO

Contributo alla conoscenza del genere *Aulacia* Baly, 1867 (Coleoptera, Chrysomelidae, Eumolpinae)

L'Autore fornisce una chiave dicotomica per l'identificazione delle nove specie attualmente attribuite al genere *Aulacia*.

Vengono designati i lectotipi di *A. ornata* Jacoby, 1896 e di *A. flavifrons* Jacoby, 1896; quest'ultima specie risulta un sinonimo di *A. diversa* Baly, 1867.

Sono infine descritte tre nuove specie: *A. fulva* e *A. laeta* della Penisola malese e *A. riedeli* di Borneo.